

ABSTRACT

A method for managing the flow of a plurality of aircraft at an aviation resource, based upon specified data and operational goals pertaining to the aircraft and resource and the control of aircraft arrival fix times at the resource by a system manager, includes the steps of: (a) collecting and storing the specified data and operational goals, (b) processing the specified data to predict an initial arrival fix time for each of the aircraft at the resource, (c) specifying a goal function which is defined in terms of arrival fix times and whose value is a measure of how well the aircraft meet the operational goals based on achieving specified arrival fix times, (d) computing an initial value of the goal function using the predicted initial arrival fix times, (e) utilizing the goal function to identify potential arrival fix times to which the arrival fix times can be changed so as to result in the value of the goal function indicating a higher degree of attainment of the operational goals than that indicated by the initial value of the goal function, (f) if the utilization step yields a goal function whose value is higher than the initial goal function value, defining requested arrival fix times to be those arrival fix times associated with the higher goal function value; but, if the utilization step does not yield a goal function whose value is higher than the initial goal function value, defining requested arrival fix times to be the predicted, initial arrival fix times, (g) communicating the requested arrival fix times to the system manager to determine whether authorization may be obtained from the system manager for the aircraft to use the requested arrival fix times, (h) if the arrival fix times authorization is obtained, establishing the requested arrival fix times as the targeted arrival fix times of the aircraft; but, if the arrival fix times authorization is not obtained, continuing to use the goal function to identify potential arrival fix times which can be communicated to the system manager until arrival fix times authorization is obtained.